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ABSTRACT

Philosophers of science have emphasized the need for primitive terms, or "givens," in the construction of theory for any discipline. While there are inherent dangers regarding the use of primitive terms, they can have great value in serving as the basis for minimum terms, which are primitive terms unique to a discipline. (Borrowed terms are those shared by a discipline with other disciplines.) An initial and exploratory attempt to discover minimum terms for speech communication identifies such terms as "message," "encoder" (or speaker), "decoder," and--possibly--"symbol." In addition to developing its own minimum terms, speech communication should borrow terms from other fields when appropriate. While selection of proper terminology is valuable and should be pursued, such selection is only the first step in the construction of speech communication theories. (GW)

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SCIENTIFIC TERMINOLOGY AND MINIMUM TERMS IN SPEECH COMMUNICATION: SOME PHILOSOPHICAL RAMBLINGS

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and

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ABSTRACT

Philosophers of science have posited the need for primative terms (or "givens") in the construction of theory for any discipline. The relationship between scientific terminology and theory construction is explored with an emphasis on the nature of primative terms. The reason for this discussion is that primative terms serve as the basis for minimum terms, which are primative terms unique to a discipline. Borrowed terms are primative terms shared by a discipline with other disciplines.

It is argued that rather than search for an "identy" of the field of speech communication, we should instead attemp to discover the minimum terms for our field as a way of illustrating the uniqueness of the discipline.

Such and attempt to discover minimum terms for speech communication is started. This initial and exploratory effort identified such terms as "message," "encoder" (or speaker), and "decoder" (or audience) as minimum terms for the field of speech communication.

This effort to identify minimum terms for the discipline does not imply the rejection of terminology from other fields of study. I we can identify minimum terms for our field, then borrowing terms from other fields for use in theory construction does not make speech communication any less unique.

INTRODUCTION

Like "Six Characters in Search of an Author," the field of speech communication has for some time been searching for its identity. Moreover, confusion and tension appear to be increased in this effort by an apparent split between the "traditional" and "behavioral" factions in the field. Perhaps this tension as well as that associated with the search itself, is caused by an incorrect focus, rather than by the "impossible" task. It is possible that the cause of the tension has been the lack of an adequate theoretical base in speech communication. Instead of searching for an "identity," scholars in the field should, perhaps, attempt to establish a viable theory of speech communication. A proper theoretical basis for the field may, in the long run, also have the advantage of bringing the sometimes conflicting factions together by establishing common building blocks for both.

The need for an adequate theoretical base should not, however, be considered a call for an immediate headlong rush into theory construction. If the philosphers of science are to be believed, theory construction is a logical process. Following the logic established by these philosophers, the construction of a theoretical base for the field of speech communication should begin with the establishment of proper terminology. In an attempt to establish such terminology the present paper examines the concept "minimum term" and discusses its role in theory construction for speech communication.

TERMINOLOGY AND THEORY CONSTRUCTION

Hempel notes the importance of terminology in theory construction when he states that "it is precisely the discovery of concept systems with theoretical import which advances scientific discovery."[1] He goes on to identify two broad categories of "concept systems" necessary for scientific discovery: logical and extra-logical.

> The total vocabulary of any scientific theory contains terms which belong to the vocabulary of logic and mathematics, such as 'not,' 'and,' 'or,' 'if . . . then ___,' 'all,' 'some,' etc., or their symbolic equivalents; symbols for numerals as well as for operations on them; and finally, variables or equivalent expressions. The balance of terms in the total vocabulary of a theory T will be called the extra-logical vocabulary, or, briefly, the vocabulary, of T.[2]

The extralogical terms form the conceptual heart of any theory. Yet, it is through the use of these terms that most confusion and problems with meaning arise. Hempel has attempted, at least partially, to solve this problem:

> Science aims at knowledge that is objective in the sense of being intersubjectively certifiable, independently of individual opinion or preference, on the basis of data obtainable by suitable experiments or observations. This required that the terms used in formulating scientific statements have clearly specified meanings and be understood in the same sense by all that use them.[3]

There are, of course, many approaches to the problem of definition, both from within and without a theoretical formulation. The logical positivist view (similar to that given above, though in a much expanded and heavily philosophical manner) is provided by Hempel[4] and Carnap.[5] Kaplan[6] and Kerlinger[7] have provided a different discussion of the problem of definition, with special emphasis on definitions for research purposes. Scriven has explicated and critiqued an extensive list of various definitional approaches.[8] While a discussion of the various approaches to defining terms is an important

and valuable one, it is unfortunately beyond the scope of this paper.

Hempel has noted that the use of primitive terms and defined (or derived) terms which are both subcategories of the extralogical vocabulary is one method of dealing with many of the problems encountered by the need to define terms. The use of primitive terms provides a means of alleviating such problems as definitional circles and infinite definitional regress. One obvious advantage of utilizing primitive terms in theory construction is that once primitive terms have been established, all other terms within a theory can be defined through the use of the primitive terms:

> Thus the vocabulary of a theory falls into two classes: the defined terms, i.e., those which are introduced by definition in terms of other expressions of the vocabulary, and the so-called primitive terms, or primitives by means of which all other terms of the theoretical vocabulary are ultimately defined. The primitives themselves, while not defined within the theory, may nevertheless have specific meanings assigned to them.[9]

Thus, primitive terms are not defined within a theory. Rather they are givens, which as in logics or mathematics are taken as a premise or assumed to be true. However, to state that primitive terms are given or assigned, is not to say that they lack a referential base. Hempel does indicate how the meaning of primitive terms is derived:

> In the initial stages of scientific inquiry, descriptions are stated in the vocabulary of everyday language. The growth of a scientific discipline, however, always brings with it the development of a system of specialized more or less abstract, concepts and of a corresponding technical terminology.[10]

Thus, as a science develops it moves away from everyday language; yet, the observational referents remain. The meaning of the primitive terms by which all of the complex and abstract terminology are defined are "known." It is almost as if the primitive terms of a theory are defined by consensus.

This brief description of the derivation of the meaning of primitive terms is unfair, though. It does not do justice to the intricateness and depth of the formation of the concept of "primitive term." Much of the philosophizing of the logical positivists is taken up by a discussion of the derivation of the meaning of primitive terms.[11]

The position of the logical positivists with respect to the meaning of primitive terms is, of course, not without criticism. Though a primitive term is a given (and remains undefined) within a theory, its meaning is subject to many of the same traps that its use is designed to overcome. Achinstein hints at these traps when he indicates that "a meaning is assigned to a primitive term by a semantical rule, which relates that term to some item (object property, relationship) that is familiar and understood (p. 69)."[12] Hempel as well indicates some of the weaknesses of this observational basis for the derviation of the meaning of primitive terms.[13] Disposition terms (i.e., any disposition of an object toward some activity, such as magnetic or magnetism, rather than a directly observable characteristic of that object) and quantitative (or metric) terms cannot be adequately handled within such an observational framework.

While the inherent dangers regarding the use of primitive terms are acknowledged, their status as givens within a theoretical formulation can have a great deal of value in establishing the basic terminology for a theory—including a theory (or theories) of speech communication, as well as its search for an identity. Zetterberg heightens this value of primitive terms when he carries Hempel's category distinctions one step further and subdivides primitive terms into two specific subcategories:

> Thus it appears that certain primitive terms are unique in a given discipline while others are shared with other disciplines. Let us call those primitive terms that are unique to a given theory its

'minimum terms' and those that are shared with other theories its 'borrowed terms'.[14]

Zetterberg goes on to expand his concept of minimum terms from a theory to an entire discipline, indicating that it is the minimum terms of a discipline that makes the discipline unique:

> It should be plain that a theory does not have any subject matter that can be called exclusively its own if all its primitive terms are borrowed from other sciences. If so, anything that it talks about can be exhaustively presented within the framework of theories from other sciences. On the other hand, if we have one or more terms that can properly be called minimum terms, we also have a unique subject matter. Any, phenomenon, then, that has to be defines in these minimum terms is our exclusive subject matter.[15]

Zetterberg has brought the search for identity, as well as that for an adequate theoretical base, into much sharper focus. To paraphase his questioning concerning the focus of sociology, rather than asking, "What, if any, is the proper subject matter of speech communication?", we should instead ask "What, if any, are the minimum terms of speech commincation that will be utilized in its theory construction?"

Minimum Terms for Speech Communication

Perhaps the only truly minimum term(i.e., unique term), from Zetterberg's formulation of that concept, is the term "message." Kibler and Barker report that one of the recommendations of the New Orleans Conference was to focus upon message as the key variable (as a minimum term?) in speech communication research:

> Research is speech-communication research focuses on the ways in which <u>messages</u> link participants during interactions. Emphasis is on the behavioral antecedents and their variations, as well as on the ways that messages interact with communication participants to produce behavioral outcomes.[16]

Dance reinforces the position advocated by the New Orleans conference and in so doing highlights the <u>spoken</u> nature of the message. In his words:

"the spoken word, rather than being peripheral or incidental, is central to human communication and to the study of speech communication."[17] In essences Dance argues that "spoken message" is "central" to speech communication because the concept "communication " is modified by the concept "speech." Thus, the New Orleans conference and the position advocated by Dance seem to provide the establishment of "spoken message" as a minimum term for speech communication.

Even though the term "spoken message" seems intuitively unique to the field of speech communication, the analysis of it as a minimum term is strained. Perhaps the basic reason for this difficulty in establishing "spoken message" (or any other term) as a minimum term in speech communication is due to the interdisciplinary and eclectic nature of social science research generally and speech communication research specifically. The minimum terms that Zetterberg, has identified for sociology now appear to be commonly shared among other social sciences, thus rendering them inadequate as minimum terms in his own formulation of that concept. Even the criterion that Zetterberg has established for deriving minimum terms for the field of sociology seems quite broad. Such a criterion, however, is important in an era of such interdisciplinary borrowing. The New Orleans Conference has provided one valuable criterion for the selection of minimum terms in speech communication (though, that task was, of couse, not one of which the participants were aware). Expanding upon the recommendations of that Conference, and upon the work of Dance the minimum terms in speech communication should denote spoken symbolic interaction, its actors and its antecedents and consequences.

While the establishment of a criterion for the selection of minimum terms in speech communication is valuable, it does not solve the "uniqueness" problem encountered in using "message" as a minimum term in the field of speech communication. Perhaps the above mentioned criterion along with a slight amendment

to Zetterberg's concept of a minimum term will allow for a more valid approach to the problem. Rather than unique to a discipline, perhaps a minimum term should be one that is intrinsic to or inherent within that discipline; rather than shared with other disciplines, a borrowed term should be one that is implied by its name, borrowed from another discipline. One other advantage of this conception over Zetterberg's is that it allows for the simultaneous development of terms within two or more disciplines to be considered minimum terms of those fields, a consideration which is impossible from Zetterberg's point of view. Thus, it is not necessary to identify terms which are unique to discipne, but rather terms which are an inherent part of its symbolic repetoire.

For example, the term "attitude" is widely shared among several disciplines. Under Zetterberg's conception, attitude would, thus, be a borrowed term even for the field of psychology. [18] Yet, under the new conception "attitude" would be a minimum term for psychology, since it is intrinsic to that field. In addition, the establishment of "attitude" as a minimum term seems intuitively more satisfying than to label it a borrowed term for that field. "Attitude" would remain a borrowed term in speech communication, for instance, as it was borrowed from psychology. "Message," of couse, would continue to qualify as a minimum term for speech communication under the new formulation of that concept.

Now that a modified formulation of minimum term has been devised and a criterion for the selection of the minimum terms for speech communication has been established, minimum terms, in addition to "message," can be posited. The roots for these additional terms (as well as for message) go all the way back to the Greek rhetoricians and rhetorical scholars and are common to both the traditional and behavioral factions of the field. Encoder and decoder form along with message, perhaps the most important and valuable minimum terms in the field of speech communication. Since the time of the Greek rhetorical analysis the terms have played a major role in speech communication research and are,

therefore, intrinsic to and inherent within the field. Both terms also easily fit the criterion of spoken symbolic interaction, thus establishing them along with "message" as minimum terms for speech communication. It should be noted that the concepts encoder and decoder be interpreted broadly. Encoder should also incorporate other such synonomous (or nearly synonomous) terms as speaker, source, and sender. Decoder should also encompass similar terms as audience and receiver. Thus, encoder and decoder also became identified as minimum terms in speech communication.

One more term important to speech communication has a less solid base for establishment as a minimum term in the field. The term "symbol" is not only a frequent variable in speech communication research, but also forms a critical part of the criterion employed for selection of minimum terms for the field. It should be reiterated that this criterion was selected from the recommended focus for the field of speech communication adopted at the New Orleans Conference. While "symbol" is much employed in communication research, it is less clear whether the term is intrinsic to the field. An adequate case could be made that "symbol" is borrowed, rather than a minimum term more properly intrinsic to the field of philosophy. A powerful argument could be made for either case. Yet, even if "symbol" is a borrowed term for speech communication, it is of such special importance that it is certainly worth noting.

The list of suggested minimum terms identified (whether including symbol or not) should not be considered to be either complete or exhaustive. Rather it is an initial attempt to enumerate some of the more important and apparent minimum terms in speech communication. Minimum terms in and of themselves are insufficient for the theory construction that is so important for the advancement of knowledge within the field. Derived terms, defined by the primitives (both minimum and borrowed), form many of the abstract and complex, yet extremely important, terms for theory construction in speech communication. Such derived

terms as persuasion, credibility, rhetoric, communication, discussion, and language comprise but some of these key derived terms. Borrowed terms also form an important portion of the entire terminology available for theory construction in speech communication. Thayer pointed toward this need for borrowed terms when he stated:

> One of the basic obstacles to the development of an efficacious and viable theory of communication seems to me to be the assumption that communication is a thing sui generis which can be studied and dealt with apart from human behavior.[19]

Thus, rather than eschewing and rejecting the terminology of other fields, speech communication should eagerly borrow terms when appropriate. Communication theorists, then, must take into account the terminology of such other fields as psychology, sociology, or any other suitable discipline. This borrowing, however, makes the field of speech communication no less unique, especially if one or more of its minimum terms are employed in its theory construction.

As previously mentioned, there are many problems with the logical positivist view of terminology in theory construction. However, that view does seem to be a valuable one for helping to establish the minimum terms of a discipline. In any specific theory, however, it may not be productive to employ primitive terms, since their undefined status as givens may create more problems in terms of confusion and ambiguity than solving those problems their formulation attempts to do. Perhaps a more appropriate system for experimental and empirical research is that outlined by Kerlinger.[20] His approach to the problem of definition, that of constitutive and operational definitions, seems to be an excellent one for the construction of specific theories in speech communication.

Terminology in all its varied forms, however, is not sufficient for the advancement of the discipline. The establishment of a proper terminology is

but a first step in a larger process. Hempel indicates the importance of terminology, yet places it in the larger process:

> Broadly speaking, the vocabulary of a science has two basic functions: first, to permit an adequate description of things and events that are objects of scientific investigation; second, to permit the establishment of general laws by means of which particular events may be explained and predicted and thus scientifically understood; for to understand a phenomenon scientifically is to show that it occurs in accordance with general laws or theoretical principles.[21]

Terminology, a necessary initial step, is important, but again is only an initial step, for the building of theory. Terminology, though, is important only in its inclusion in the process of theory construction. Only with adequate terms can there be adequate theory;"...the better our concepts, the better the theory we can formulate with them, and in turn the better the concepts available for the next improved theory."[22] Thus, while selection of proper terminology is valuable and should be pursued, it must be kept in mind that such selection is only the first step in the construction of a theory (or theories) of speech communication.

CONCLUSION

The concept of minimum terms has been briefly explored in this paper from three viewpoints: its formulation by philosophers of science, its importance as an initial step in the broader process of theory construction; and the selection of specific minimum terms in speech communication as a method of indicating the uniqueness of the discipline. The uniquenss of any discipline in this era of interdisciplinary study, however, may seem to be somewhat suspect. It is possible that we all merely carve out a niche for ourselves where it is most

convenient and where we feel most comfortable, then choose to do any research that seems interesting and legitimize it by invoking the gods of interdisciplinarity and eclectism. Some within our field certainly follow this strategy. To others, however, it may be more satisfying and esteem building to be a part of a unique discipline (which may contribute to the feeling of uniqueness for the individuals within that discipline). Hopefully, this discussion of the concept "minimum term" has proved helpful in the search for a uniqueness in the field of speech communication.

FOOTNOTES

[1]C. G. Hempel, Fundamentals of Concept Formation in Empirical Science (Chicago:Univ. of Chicago Press, 1952), p. 47.

[2]Ibid, pp. 14-15.

[3]C. G. Hempel, Aspects of Scientific Explanation and Other Essays in the Philisophy of Science (New York:The Free Press, 1965), p. 141.

[4]Hempel, 1952 and Hempel, 1965.

[5]R. Carnap, "The Methodological Character of Theoretical Concepts," in Minnesota Studies in the Philosophy of Science, Vo. I, ed. H. Feigl and M. Scriven (Minneapolis, Minn.:Univ. of Minnesota Press, 1956).

Excellent criticisms of the logical positivists can be found in D. J. O'Keefe, "Logical Empiricism and the Study of Human Communication," SM, 42(1975), 195-208 and P. Achinstein, Concepts of Science: A Philosophical Analysis (Baltimore, Md.: The Johns Hopkins Press, 1968).

[6]A. Kaplan, The Conduct of Inquiry (San Francisco:Chandler, 1964).

[7]F. N. Kerlinger, Foundations of Behavioral Research, 2nd ed. (New York:Holt Rinehart, and Winston, 1973).

[8]M. Scriven, "Definitions, Explanations, and Theories," in Minnesota Studies in the Philosophy of Science, Vol. II, ed. H. Feigl, M. Scriven, and G. Maxwell (Minneapolis, Minn.:Univ of Minnesota Press, 1958).

[9]Hempel, 1952, p. 15.

[10]Ibid, p. 1.

[11]The interested reader should consult the works of Hempel, 1952 and 1965 and Carnap, 1956 for an adequate treatment of this important issue.

[12]Archinstein, 1968.

[13]Hempel, 1952.

[14]H. L. Zetterberg, On Theory and Verification in Sociology (Totowa, N. J.: The Bedminster Press, 1965), p. 50.

[15]Ibid, p. 50-51.

[16]R. J. Kibler and L. L. Barker, eds., Conceptual Frontiers in Speech-Communicatio (New York:Speech Association of America, 1969), p. 33.

[17]F.E.X. Dance, "The Centrality of the Spoken Word," Central States Speech Journal, 23 (1972), 197-201, p. 197.

[18]Even the most cursory look at Aristotle's Rhetoric (Book II) will lead to the conclusion that such concepts as "sentiments," "predispositions," "values," and "feelings" were inherent to the study of rhetoric before they became "coin of the realm" for social psychology. Thus, if any borrowing has been done, the borrowing appears to have been from rhetoric, not by rhetoric (or speech communication).

[19]L. A. Thayer, "On Theory-building in Communication: Some Conceptual Problems," 13 (1963), 217-235, p. 218.

[20]Kerlinger, 1973.

[21]Hempel, 1965, p. 139.

[22]Kaplan, 1964, p. 54.